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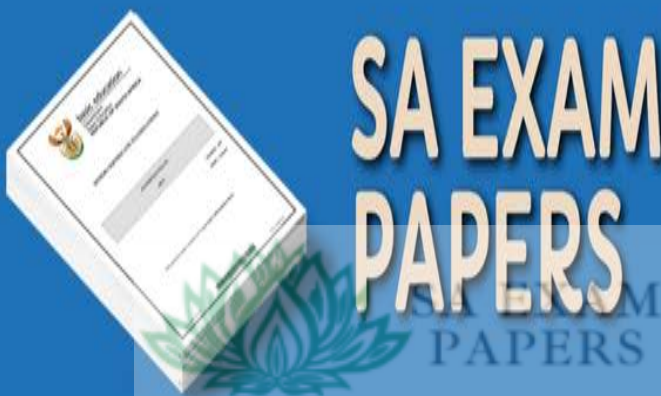


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EASTERN CAPE
EDUCATION

CHRIS HANI EAST

**NATIONAL
SENIOR CERTIFICATE**

**GEOGRAPHY
PRE-TRIAL PAPER 1**

MARKS : 150

TIME: 3 HOURS

This question paper consists of 14 pages.

1. This question paper consists of TWO SECTIONS:

SECTION A

QUESTION 1: Climate and Weather. (60)

QUESTION 2: Geomorphology. (60)

SECTION B

QUESTION 3: Geographical Skills and Techniques. (30)

2. Answer ALL THREE questions.
3. ALL diagrams are included in the QUESTION PAPER.
4. Leave a line between subsections of questions answered.
5. Start EACH question at the top of a NEW page.
6. Number the questions correctly according to the numbering system used in this question paper.
7. Do NOT write in the margins of your ANSWER BOOK.
8. Draw fully labelled diagrams when instructed to do so.
9. Answer in FULL SENTENCES, except when you have to state, name, identify or list. Write in full sentences when answering paragraph questions.
10. Units of measurement MUST be indicated in your final answer, e.g., 20 times, 10 m.
11. You may make use of a non-programmable calculator.
12. You may make use of a magnifying glass.
13. Write clearly and legibly.

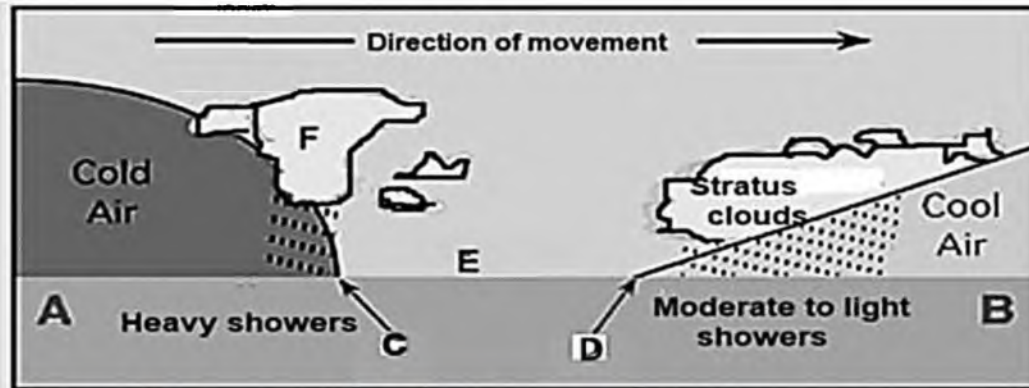
SPECIFIC INSTRUCTIONS AND INFORMATION FOR SECTION B

1. A 1:50 000 topographic map 3025AD of PHILIPPOLIS and a 1:10 000 orthophoto map 3025AD 01 of PHILIPPOLIS are provided.
2. The area demarcated in RED on the topographic map represents the area covered by the orthophoto map.
3. Show ALL calculations and formulae where applicable. Marks will be allocated for this.
4. You must hand in the topographic map and the orthophoto map to the invigilator at the end of this examination session.

QUESTION 1: CLIMATE AND WEATHER

- 1.1 Refer to the figure below that shows a mid-latitude cyclone and answer the questions that follow.

MID-LATITUDE CYCLONE



- 1.1.1 In which general direction does this mid-latitude cyclone move?
- 1.1.2 Is the direction of movement of the mid-latitude cyclone influenced by the (easterly/westerly) winds?
- 1.1.3 In which season is the Western Cape affected by the mid-latitude cyclone?
- 1.1.4 The (cold/warm) front affects the Western Cape in general.
- 1.1.5 Name the clouds represented by the letter **F**.
- 1.1.6 The pressure will (drop/rise) when a cold front passes over an area.
- 1.1.7 The area indicated by the letter **E** is known as the ...
- 1.1.8 Does front **C** or **D** have a gentle gradient?

(8 x 1) (8)

- 1.2 Choose the term/concept from COLUMN B that matches the description in COLUMN A. Write only the letter (A-H) next to the question numbers (1.2.1 to 1.2.7) in the ANSWER BOOK, e.g., 1.2.8 C.

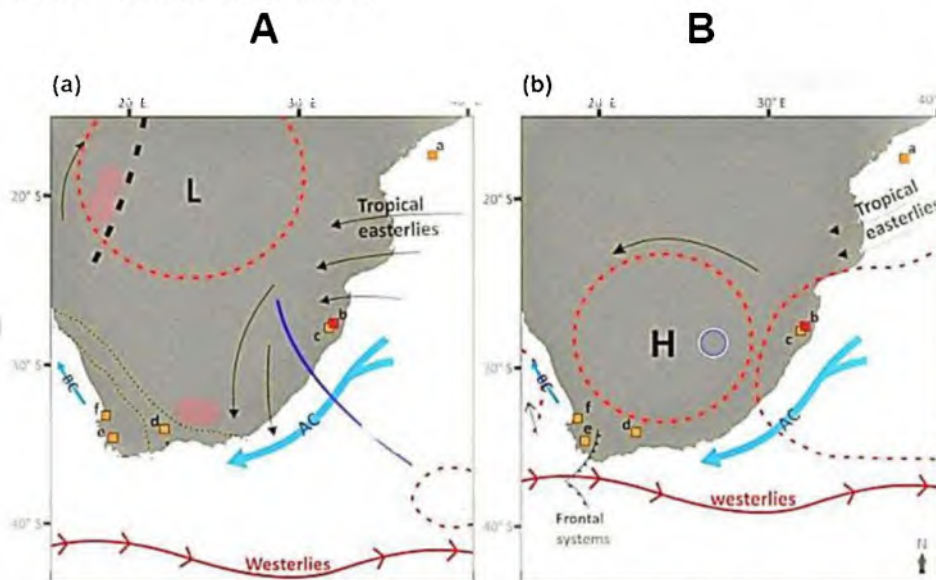
COLUMN A		COLUMN B	
1.2.1	An area of warmer temperature than the surrounding rural areas	A	Front
1.2.2	Lines that join places with the same temperature	B	Thermal belt
1.2.3	A slope that does not receive the direct rays of the sun	C	Pollution dome
1.2.4	The climate of a small area such as a valley or city	D	Pollution plume
1.2.5	The zone where the warm air accumulates midway up the valley	E	Heat island
1.2.6	The zone between two air masses with a different moisture content	F	Microclimate
1.2.7	Consists of an accumulation of soot, dust, smoke and other pollutants that form over the city	G	Isotherms
		H	Shadow zone

(7 x 1) (7)

- 1.3 Refer to the map below, based on a tropical cyclone and answer the questions that follow.



- 1.3.1 What is tropical cyclone? (1 x 2) (2)
- 1.3.2 How many tropical cyclones have been experienced before tropical cyclone Eloise in this region? (1 x 1) (1)
- 1.3.3 Give a reason for the general direction in which cyclone Eloise moves. (1 x 2) (2)
- 1.3.4 Describe any TWO factors that contributed to the formation of Eloise. (2 x 2) (4)
- 1.3.5 On Saturday at 9 a.m. Elois turned into a *category 3* storm. What does *category 3* mean? (1 x 2) (2)
- 1.3.6 Refer to your answer in QUESTION 1.3.5 and briefly explain TWO strategies that can be used to manage the effects of the *category 3* storm. (2 x 2) (4)
- 1.4 Refer to the maps below showing the influence of pressure cells on South Africa's weather and climate.



[Source: <https://www.google.com/search?q=pressure+cells+on+South+Africa%27>]

- 1.4.1 Name the pressure cell that dominates the land in this season represented by map B. (1 x 1) (1)
- 1.4.2 State TWO characteristics of this pressure cell (answer to QUESTION 1.4.1). (2 x 1) (2)
- 1.4.3 Does map A or B represent summer conditions? (1 x 1) (1)

1.4.4 Give a reason to support your answer in

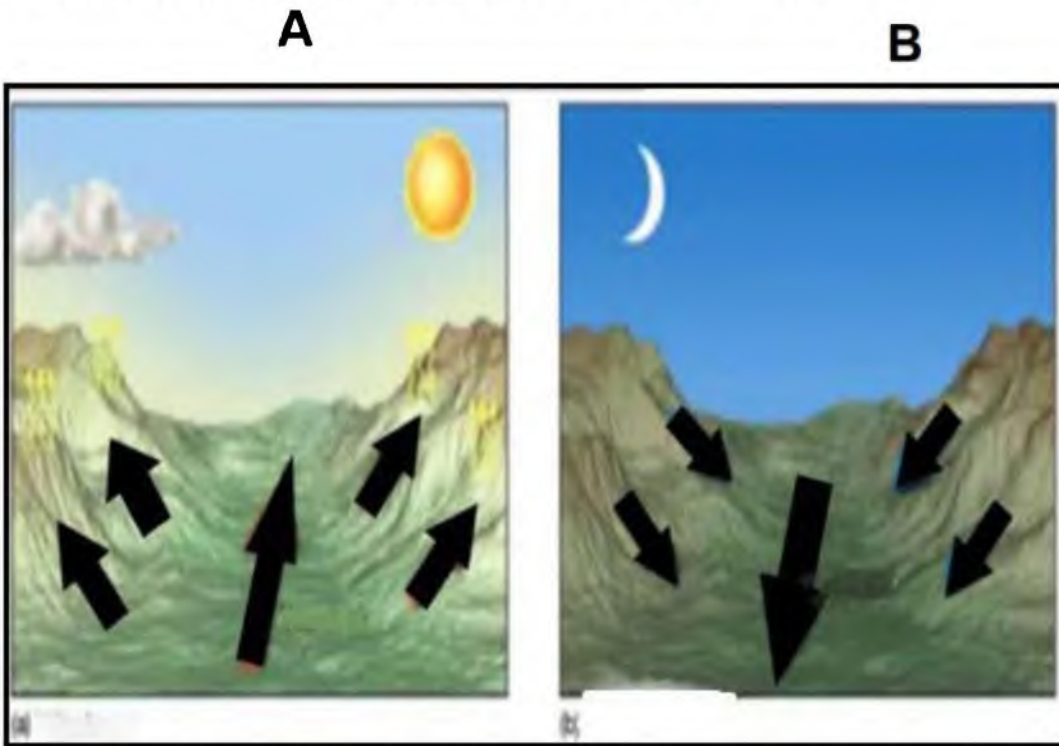
QUESTION 1.4.3.

(1 x 2) (2)

1.4.5 In a paragraph of approximately EIGHT lines, explain how the position of the inversion will affect the weather of South Africa during the summer and winter seasons.

(4 x 2) (8)

1.5 Refer to the diagrams below, based on valley climates.



[Source: <https://www.google.com/search?q=katabatic+and+anabatic+winds&tbn>]

1.5.1 Name the type of winds represented by diagrams **A** and **B**, respectively.

(2 x 1) (2)

1.5.2 If the temperature drops below 0° overnight, what form of precipitation will form at the bottom of diagram **B**?

(1 x 2) (2)

1.5.3 Suggest a reason for the difference in the direction of air movement in valleys **A** and **B**.

(2 x 2) (4)

1.5.4 Account for the increase in temperature with an increase in height in valley **B**.

(2 x 2) (4)

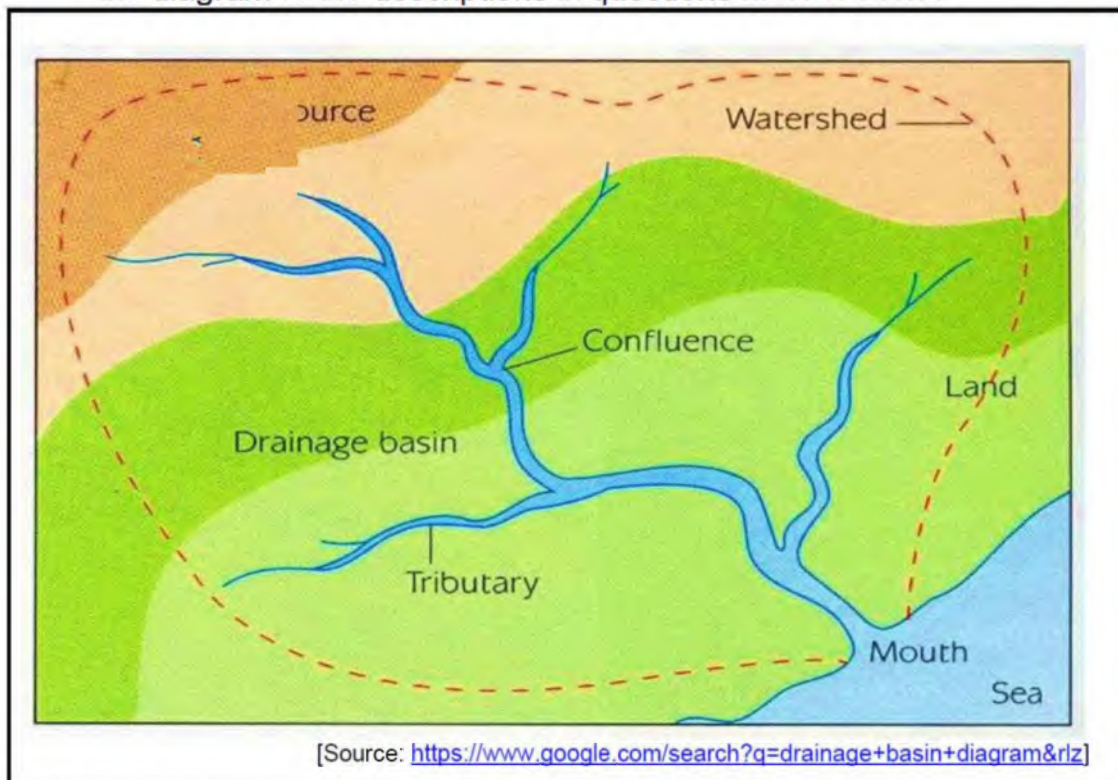
1.5.5 Briefly explain the conditions under which radiation fog forms in valley **B**.

(2 x 2) (4)

[60]

QUESTION 2: GEOMORPHOLOGY

- 2.1 Refer to the sketch based on a drainage basin below. Match the concepts on the diagram to the descriptions in questions 2.1.1 to 2.1.7.



- 2.1.1 A high-lying area found between two drainage basins
- 2.1.2 The area where the river flows into an ocean or sea
- 2.1.3 The point where two rivers meet
- 2.1.4 An area of land from which a river and its tributaries get their water
- 2.1.5 A small river that flows into the main river/stream
- 2.1.6 The point or area where the river begins/starts
- 2.1.7 The main river and its tributaries

(7 x 1) (7)

- 2.2 Various options are provided as possible answers to the following questions.
Choose the answer and write only the letter (A-D) next to the question numbers (2.2.1 to 2.2.8) in the ANSWER BOOK, for example, 2.2.9 C.

2.2.1 A/an ... river is a river that originates in an area of high rainfall but flows through dry areas.

- A permanent
- B exotic
- C episodic
- D seasonal

2.2.2 River flowing in a bubbling, vertical and tumbling circulation movement is called ...

- A smooth flow.
- B turbulent flow.
- C laminar flow.
- D rough flow.

2.2.3 The ... is a curve or bend found along the course of the river.

- A meander
- B meander scar
- C braided stream
- D oxbow lake

2.2.4 ... describes a river that begins a new cycle of erosion because of renewed energy.

- A Misfit
- B Captor
- C Rejuvenation
- D Captured

2.2.5 The water table is always above the riverbed of the ... river.

- A periodic
- B episodic
- C exotic
- D permanent

2.2.6. The water table is closer to the surface of the earth under the following conditions:

- A The land has a steep gradient and a lot of rainfall.
- B The gradient of the land is gentle, and the rock is impermeable.
- C The rock is permeable, and there is little rainfall.
- D There is very little rainfall, and the gradient is gentle.

2.2.7 A ... develops where a resistant layer of hard rock crosses the path of a river.

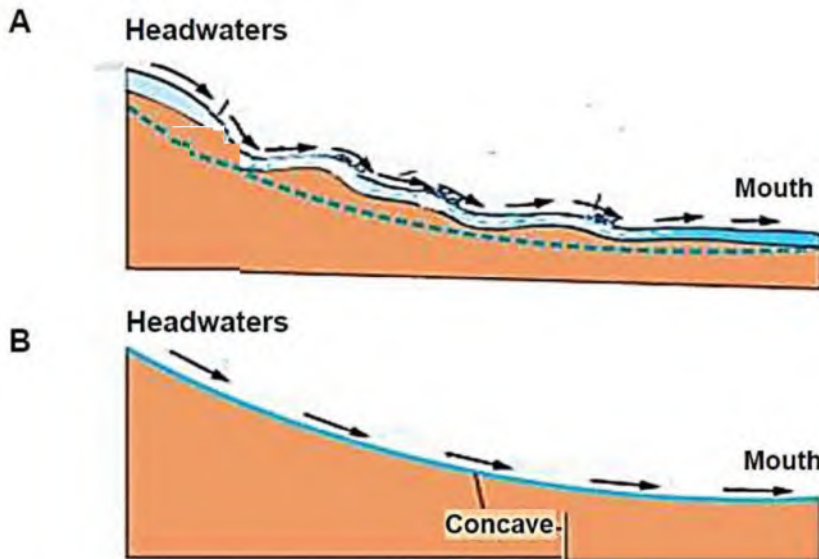
- A rapid
- B waterfall
- C plunge pool
- D river cliff

2.2.8 The river maintains its general course despite the land being uplifted.

- A Superimposed
- B Captured
- C Capture
- D Antecedent

(8 x 1) (8)

2.3 Refer to the sketches based on river grading



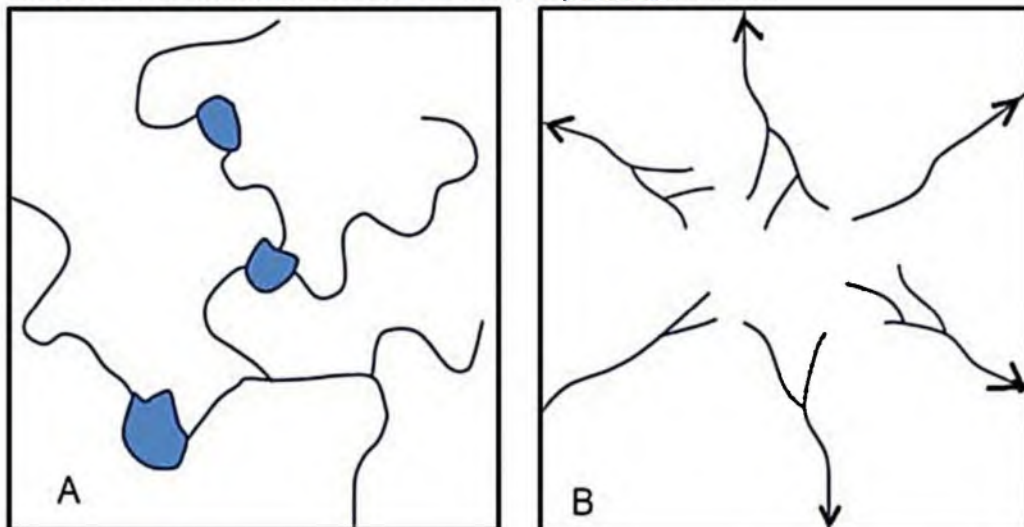
2.3.1 What is a longitudinal profile? (1 x 2) (2)

2.3.2 Which sketch represents the ungraded river? (1 x 1) (1)

2.3.3 Distinguish between graded and ungraded rivers/streams. (2 x 2) (4)

2.3.4 Refer to the sketches above, and write a paragraph of approximately EIGHT lines, to explain how a river maintains its graded longitudinal profile. (4 x 2) (8)

2.4 Refer to the sketches based on stream patterns below.



- 2.4.1 Identify stream patterns **A** and **B**, respectively. (2 x 1) (2)
- 2.4.2 On what type of rock structure is **B** likely to form? (1 x 1) (1)
- 2.4.3 What are the characteristics of stream pattern **B**? (2 x 2) (4)
- 2.4.4 Explain the formation of stream pattern **A**. (2 x 2) (4)
- 2.4.5 Account for the low stream density in **B**. (2 x 2) (4)

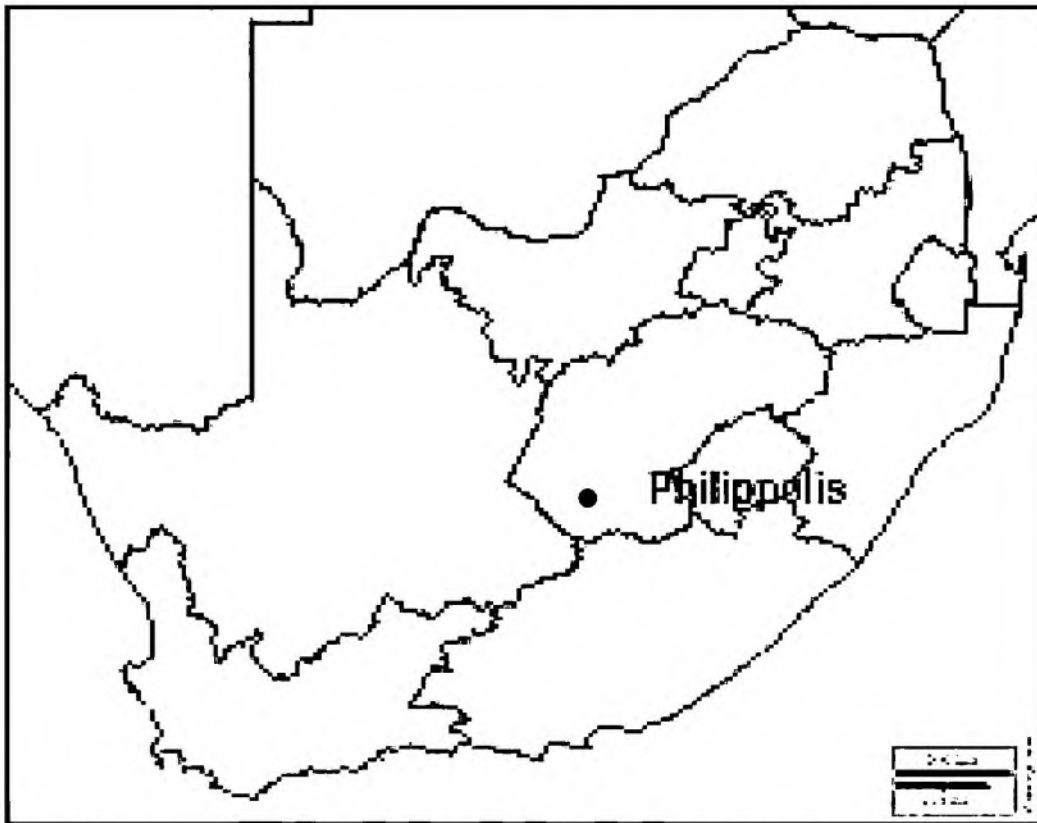
2.5 The photograph below shows an environmental injustice.



[Source: [HTTPS://www.google.com](https://www.google.com)]

- 2.5.1 Which department is responsible for the health and sustainable use of rivers in South Africa? (1 x 1) (1)
- 2.5.2 Name TWO environmental injustices shown in the photograph. (2 x 1) (2)
- 2.5.3 What is the cause of the injustices mentioned in QUESTION 2.5.2? (1 x 2) (2)
- 2.5.4 What impact does the injustice (answer to QUESTION 2.5.2) have on our rivers? (2 x 2) (4)
- 2.5.5 Discuss THREE possible ways of solving the negative effect of humans on drainage basins. (3 x 2) (6)

[60]

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES.**GENERAL INFORMATION ON PHILIPPOLIS**

Philippolis is a small town situated in the **Motheo and Xhariep** region of the **Free State Province** in **South Africa**. In 1823 it served as a missionary outpost for the Bushman. It makes **Philippolis** the oldest settlement in the **Free State Province**. This town was named after John Philip of the London Missionary Society. In 1826 Adam Kok II, a Griqua leader settled here with his folks and was made the guardian of the mission, but he then, together with his followers, killed all the Bushmen at the Mission Station. Seventy-five of **Philippolis's** buildings have been declared national monuments. The library is amongst one of these buildings, and many places are built in Karoo-style, which means they have thick walls.

The following English terms and their Afrikaans translation are shown on the topographical map:

ENGLISH

Diggings
River
Estate
Nature Reserve

AFRIKAANS

Delwerye/Uitgrawings
Rivier
Landgoed
Natuurreserveaat

The questions below are based on the 1:50 000 topographical map 3025AD PHILIPPOLIS, as well as the orthophoto map 3025AD PHILIPPOLIS

3.1 MAP SKILLS AND CALCULATIONS

Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question numbers in the ANSWER BOOK, e.g., 3.1.2 A.

3.1.1 Phillipolis is situated in the ...

- A Eastern Cape.
- B Western Cape.
- C Northern Cape.
- D Free State.

(1 x 1) (1)

3.1.2 The contour interval of the orthophoto map is ...

- A 20.
- B 10.
- C 15.
- D 5.

(1 x 1) (1)

3.1.3 Refer to the topographical map to calculate the area marked in RED in km². Marks will be awarded for calculations.

(5 x 1) (5)

3.1.4 Give ONE reason why it is important to calculate the area if you want to build a new house.

(1 x 2) (2)

3.1.5 Refer to the orthophoto map. What is the geographical or map bearing from the school (**1 in block B1**) to the library (**2 in block C2**)?

(1 x 1) (1)

3.2 MAP INTERPRETATION AND APPLICATION

The following questions are based on the topographical map.

- 3.2.1 Suggest a reason from the topographic map for the choice of site for the town of Philippolis. (1 x 1) (1)
- 3.2.2 Identify the drainage pattern in blocks **F6** and **F7**, respectively. (1 x 1) (1)
- 3.2.3 What could be the reason for high soil erosion in the southern part of Philippolis? (1 x 2) (2)
- 3.2.4 Why does the farmer choose to grow crops in blocks **F10** and **G10**? (1 x 2) (2)
- 3.2.5 Philippolis receives seasonal rainfall. Provide TWO pieces of evidence to support the statement. (2 x 1) (2)

The following questions refer to the orthophoto map.

- 3.2.6 Identify the feature marked **3**. (1 x 1) (1)
- 3.2.7 When was the orthophoto map taken, between 10 a.m. and 11 a.m. or 2 p.m. and 4 p.m.? (1 x 1) (1)
- 3.2.8 Support the answer from QUESTION 3.2.7 with evidence from the map. (1 x 2) (2)

3.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

- 3.3.1 Define the term *remote sensing*. (1 x 2) (2)
- 3.3.2 Name ONE advantage of remote sensing. (1 x 1) (1)
- 3.3.3 What is data standardisation? (1 x 2) (2)
- 3.3.4 What evidence is there to show that data standardisation was used on the topographical map of Philippolis? (1 x 1) (1)
- 3.3.5 Briefly explain why it is important to standardise the data. (1 x 2) (2)

[30]

GRAND TOTAL: 150